

IN THE CLAIMS:

1 1-37 (Cancelled)

1 38. (Currently Amended) A direct oxidation fuel cell and water generating system,
2 comprising:

3 a housing;

4 a source of fuel in fluid communication with said housing, wherein the fuel is
5 substantially composed of pure methanol;

6 a source of oxygen in fluid communication with said housing;

7 a membrane electrode assembly having a catalyzed membrane electrolyte, with an
8 anode aspect and a cathode aspect, disposed within said housing, an anode chamber being
9 defined between said anode aspect of the catalyzed membrane electrolyte and a first exte-
10 rior portion of said housing, and a cathode chamber being defined between said cathode
11 aspect of the catalyzed membrane electrolyte and a second exterior portion of said hous-
12 ing; and

13 a plurality of openings, a first opening being an air inlet allowing air introduction
14 into said anode chamber, and a second opening being a separate fuel inlet allowing intro-
15 duction of fuel into said anode chamber, such that when air and fuel are introduced into
16 said anode chamber, fuel is oxidized on said anode aspect into water and carbon dioxide,
17 said anode chamber further including an opening through which carbon dioxide exits.

1 39. (Previously Presented) The system as defined in claim 38 further comprising:

2 a load detachably coupled across said fuel cell which load receives power from
3 said fuel cell in an electricity generating mode when said first opening in said anode
4 chamber is closed to prevent air from entering said anode chamber, and water is gener-
5 ated on the catalyzed cathode aspect of the membrane electrolyte, such that the system
6 functions as a direct methanol fuel cell and produces electricity.

1 40. (Previously Presented) The system as defined in claim 38 wherein said first open-
2 ing is an adjustable oxygen valve in said housing that can be closed to prevent oxygen
3 from entering said anode chamber.

1 41. (Previously Presented) The system as defined in claim 40 wherein said second
2 opening is a fuel inlet valve in fluid communication with the anode chamber of said fuel
3 cell, which operates to introduce fuel into said anode chamber as the system functions in
4 a water generating mode at said anode chamber.

1 42. (Previously Presented) The system as defined in claim 41 wherein said adjustable
2 oxygen valve is closed to prevent oxygen from entering said anode chamber, and said
3 fuel inlet valve operates to introduce fuel into the anode chamber of the fuel cell, and a
4 load is connected across the fuel cell such that the system functions in an electricity gen-
5 erating mode.

1 43. (Previously Presented) The system as defined in claim 41 wherein said adjustable
2 oxygen valve is closed to prevent oxygen from entering said anode chamber, and said
3 fuel inlet valve operates to introduce fuel into the anode chamber of the fuel cell, and a
4 load is uncoupled and not connected across the fuel cell such that there is fuel crossover
5 and the system functions in a water generating mode at the cathode chamber.

1 44. (Previously Presented) The system as defined in claim 43 further comprising said
2 load being a variable load that can be used to periodically induce fuel crossover, resulting
3 in the generation of water.

1 45. (Currently Amended) An apparatus for the delivery of water to the anode of a
2 fuel cell, comprising:
3 a housing;

4 a source of fuel in fluid communication with said housing, wherein the fuel is
5 substantially composed of pure methanol;

6 a source of oxygen in fluid communication with said housing;

7 a membrane electrode assembly having a catalyzed membrane electrolyte, with an
8 anode aspect and a cathode aspect, disposed within said housing, an anode chamber being
9 defined between said anode aspect of the catalyzed membrane electrolyte and a first exte-
10 rior portion of said housing, and a cathode chamber being defined between said cathode
11 aspect of the catalyzed membrane electrolyte and a second exterior portion of said hous-
12 ing; and

13 a plurality of openings, a first opening being an air inlet allowing air introduction
14 into said anode chamber, and a second opening being a separate fuel inlet allowing intro-
15 duction of fuel into said anode chamber, such that when air and fuel are introduced into
16 said anode chamber, fuel is oxidized on said anode aspect into water and carbon dioxide,
17 said anode chamber further including an opening through which carbon dioxide exits
18 such that said system functions to generate water; and

19 a coupling to a second fuel cell to deliver water to the anode of said second fuel
20 cell.

1 46-50 (Cancelled)

1 51. (Currently Amended) A method of employing a direct oxidation fuel cell system
2 as a combined power generator, and water generator, ~~comprising the steps of:~~

3 (A) providing a housing;

4 (B) providing a source of fuel in fluid communication with said housing;

5 (C) providing a source of oxygen in fluid communication with said housing;

6 (D) providing a membrane electrode assembly having a catalyzed membrane
7 electrolyte, with an anode aspect and a cathode aspect, disposed within
8 said housing, an anode chamber being defined between said anode aspect
9 of the catalyzed membrane electrolyte and a first exterior portion of said
10 housing, and a cathode chamber being defined between said cathode as-

11 pect of the catalyzed membrane electrolyte and a second exterior portion
12 of said housing; and
13 (E) providing a first opening being an air inlet for the introduction of oxygen
14 into the anode chamber;
15 (F) providing a second opening being a separate fuel inlet for the introduction
16 of fuel into said anode chamber;
17 (G) detachably connecting a load across said membrane electrode assembly;
18 and
19 (H) introducing fuel and oxygen into said anode chamber to oxidize said fuel
20 to produce water, and detaching said load such that the system produces no electricity.

1 52. (Cancelled)

1 53. (Cancelled)

1 54. (Currently Amended) The method of employing a direct oxidation fuel cell sys-
2 tem as a combined power generator, and water generator as defined in claim 51 further
3 comprising ~~the further step of:~~
4 preventing the introduction of oxygen into the anode chamber; and
5 allowing the introduction of fuel into said anode chamber, while not connecting
6 said load across said membrane electrode assembly, such that fuel is added to said anode
7 chamber to induce fuel cross over and to generate water in said cathode chamber.

1 55. (Cancelled)